

## CLAIMS

What is claimed is:

- 5 1. A coated photonic crystal fiber comprising:
  - (i) a photonic crystal fiber; and
  - (ii) a protective coating surrounding said photonic crystal fiber, wherein said protective coating has the following combination of properties
    - 10 (a) an elongation to break of at least 25%;
    - (b) a secant modulus below 100 MPa;
    - (c) an adhesion to glass at 50% RH of at least 0.2 N;
    - (d) an adhesion to glass at 95% RH of at least 0.02 N; and/or
    - (e) a water sensitivity of less than 10 wt%.
- 15 2. A coated photonic crystal fiber comprising:
  - (i) a photonic crystal fiber; and
  - (ii) a protective coating surrounding said photonic crystal fiber, wherein said protective coating has a refractive index below 1.45.
- 20 3. The coated photonic crystal fiber of claim 1, wherein said protective coating has an elongation to break of at least 50%.
4. The coated photonic crystal fiber of claim 1, wherein said protective coating has an elongation to break of at least 100%.
- 25 5. The coated photonic crystal fiber of claim 1, wherein said protective coating has a secant modulus below 50 MPa.
6. The coated photonic crystal fiber of claim 1, wherein said protective coating has a
- 30 secant modulus below 2.5 MPa.
7. The coated photonic crystal fiber of claim 1, wherein said protective coating has an adhesion to glass at 50% RH of at least 0.3 N.

8. The coated photonic crystal fiber of claim 1, wherein said protective coating has an adhesion at 50% RH of at least 0.5 N.

5 9. The coated photonic crystal fiber of claim 1, wherein said protective coating has an adhesion at 95% RH of at least 0.04 N.

10. The coated photonic crystal fiber of claim 1, wherein said protective coating has an adhesion at 95% RH of at least 0.15 N.

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11. The coated photonic crystal fiber of claim 1, wherein said protective coating has a refractive index below 1.40.

12. The coated photonic crystal fiber of claim 1, wherein said protective coating has a  
15 refractive index below 1.37.

13. The coated photonic crystal fiber of claim 1, wherein said protective coating is obtained by curing a resin composition.

20 14. The coated photonic crystal fiber of claim 13, wherein said curing is effected by ultraviolet radiation.

15. The coated photonic crystal fiber of claim 13, wherein said curing is effected by electron beam radiation.

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16. The coated photonic crystal fiber of claim 13, wherein said curing is effected by heat.

17. The coated photonic crystal fiber of claim 1, wherein said protective coating has a glass transition temperature of at most 10°C.

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18. The coated photonic crystal fiber of claim 1, wherein said coated photonic crystal fiber comprises a further coating surrounding said protective coating.

19. The coated photonic crystal fiber of claim 18, wherein said further coating has a glass transition temperature of at least 40°C.

20. The coated photonic crystal fiber of claim 18, wherein said further coating has a  
5 secant modulus of at least 300 MPa.

21. The coated photonic crystal fiber of claim 18, wherein said protective coating and/or  
said further coating is obtained by curing a composition comprising an oligomer having at  
least one ethylenically unsaturated group.

10 22. The coated photonic crystal fiber of claim 21, wherein said oligomer comprises a  
backbone having ether and/or ester groups.

23. The coated photonic crystal fiber of claim 21, wherein said oligomer comprises  
15 fluorine atoms.

24. The coated photonic crystal fiber of claim 1, wherein said protective coating is  
obtained by curing a composition comprising at least one silane coupling agent.

20 25. The coated photonic crystal fiber of claim 18, wherein said protective coating and/or  
said further coating are obtained by curing a composition comprising at least one  
photoinitiator.

26. An optical fiber ribbon comprising a plurality of coated photonic crystal fibers  
25 according to claim 1.